Amendments to the Specification

Please replace the paragraph beginning at p. 8 line 3 with the following replacement paragraph:

What are[[is]] needed are therapeutic agents to protect individuals who have incurred, or are at risk for incurring exposure to ionizing radiation. In the context of therapeutic irradiation, it is desirable to enhance protection of normal cells while causing tumor cells to remain vulnerable to the detrimental effects of the radiation. Furthermore, it is desirable to provide systemic protection from anticipated or inadvertent total body irradiation, such as may occur with occupational or environmental exposures, or with certain therapeutic techniques.

Please replace the paragraph beginning at p. 9 line 4 with the following replacement paragraph:

What are[[is]] needed are new effective cytoprotective agents which are effective in protecting animals, inclusive of humans, from the cytotoxic side effects of chemotherapeutic agents.

Please replace the paragraph beginning at p. 9 line 8 with the following replacement paragraph:

Certain α,β-unsaturated sulfones, particularly styrylbenzyl sulfones have been shown to possess antiproliferative, radioprotective and chemoprotective activity. See, US patents 6,599,932, 6,576,675, 6,548,553, 6,541,475, 6,486,210, 6,414,034, 6,359,013, 6,201,154, 6,656,973 and 6,762,207, the entire disclosures of which are incorporated herein.

Please replace the paragraph beginning at p. 9 line 18 with the following replacement paragraph:

The oxidative metabolism of sulfoxide moieties has been employed by administering sulfoxide compounds that are metabolically converted to active metabolite sulfone compounds. One example of this strategy is the administration of sulindac sulfoxide, a commonly prescribed antiinflammatory drug that has been shown to additionally have cancer chemopreventative activity. See, Thompson *et al., Cancer Research*, 1997, Jan. 15; 57(2), pg. 267-271.

Please replace the paragraph beginning at p. 10 line 29 with the following replacement paragraph:

The expression "humanized chimeric antibody" means ~~is meant~~ a chimeric antibody in which at least the constant region is human-derived.

Please replace the paragraph beginning at p. 14 line 28 with the following replacement paragraph:

The term "aromatic" refers to a carbocycle or heterocycle having one or more polyunsaturated rings having aromatic character ((4n + 2) delocalized π (pi) electrons).

Please replace the paragraph beginning at p. 20 line 10 with the following replacement paragraph:

The term "difluoro(C_x-C_y)alkyl" means an alkyl group with a minimum of x carbon atoms and a maximum of y carbon atoms, wherein one carbon atom is geminally substituted with two fluorine atoms. The fluorine-substituted carbon may be the any carbon in the chain having at least two substitutable hydrogens, including ~~the~~ a terminal CH_3[[3]] and the proximal carbon through which the difluoro(C_x-C_y)alkyl is bonded to the rest of the molecule. Examples include $-CH_2CF_2H$, $-(CH_2)_2-CF_2H$ and $-CF_2-CH_3$ and 3,3-difluorocyclohexyl.

Please replace the paragraph beginning at p. 21 line 21 with the following replacement paragraph:

It is an object of the invention to provide a method for treating cancer or other proliferative disorder which reduces or eliminates cytotoxic effects on normal cells.

Please replace the paragraph beginning at p. 22 line 21 with the following replacement paragraph:

the configuration ~~conformation~~ of the substituents on the carbon-carbon double bond is either *E*- or *Z*-;

Please replace the paragraph beginning at p. 22 line 23 with the following replacement paragraph:

the configuration ~~conformation~~ of the substituents on the sulfoxide sulfur atom is R-, S- or any mixture of R- and S-;

Please replace the paragraph beginning at p. 22 line 25 with the following replacement paragraph:

* indicates that, when R^1 is other than –H, the configuration ~~conformation~~ of the substituents on the designated carbon atom is R-, S- or any mixture of R- and S-; or a salt thereof;

Please replace the paragraph beginning at p. 23 line 9 with the following replacement paragraph:

According to some embodiments, the configuration ~~conformation~~ of the substituents on the sulfoxide sulfur atom is a racemic mixture of R- and S-.

Please replace the paragraph beginning at p. 23 line 11 with the following replacement paragraph:

According to some embodiments, the configuration ~~conformation~~ of the substituents on the * designated carbon atom is a racemic mixture of R- and S-.

Please replace the paragraph beginning at p. 23 line 18 with the following replacement paragraph:

wherein the configuration ~~conformation~~ of the substituents on the two carbons of the carbon-carbon double bond is *E*-.

Please replace the paragraph beginning at p. 23 line 22 with the following replacement paragraph:

wherein the configuration ~~conformation~~ of the substituents on two carbons of the carbon-carbon double bond is *Z*-.

Please replace the paragraph beginning at p. 24 line 15 with the following replacement paragraph:

each R^3 is independently selected from the group consisting of –H; –(C_1-C_8)hydrocarbyl, preferably -(C_1-C_6)alkyl, more preferably -(C_1-C_3)alkyl, most preferably $–CH_3$ and $–C_2H_5$; -O(C_1-C_8)hydrocarbyl, preferably -O(C_1-C_6)alkyl, more preferably -O(C_1-C_3)alkyl, most preferably $–OCH_3$ and $–OC_2H_5$; substituted and unsubstituted aryl, preferably substituted and unsubstituted phenyl; substituted heterocyclyl(C_1-C_3)alkyl; heteroaryl(C_1-C_3)alkyl; –(C_2-C_{10})heteroalkyl; –(C_1-C_6)haloalkyl, preferably trifluoro(C_1-C_6)alkyl or difluoro(C_1-C_6)alkyl, more preferably trifluoro(C_1-C_3)alkyl and difluoro(C_1-C_3)alkyl, most preferably $–CF_3$ and $-CHF_2$; $-CR^2R^4NHR^5$; $–N(R^2)_2$, –(C_1-C_3)alkyleneNH$_2$; –(C_1-C_3)alkylene-N(CH_3)$_2$; –(C_1-C_3)perfluoroalkylene-N(CH_3)$_2$; –(C_1-C_3)alkylene-N^+((C_1-C_3)alkyl)$_3$; –(C_1-C_3)alkylene-$N^+(CH_2CH_2OH)_3$; –(C_1-C_3)alkylene-OR^2; –(C_1-C_4)alkylene-CO_2R^2; –(C_1-C_4)alkylene-C(=O)halogen; -(C_1-C_3)alkylene-C(=O)(C_1-C_3)alkyl; and –(C_1-C_4)perfluoroalkylene-CO_2R^2;

Please replace the paragraph beginning at p. 27 line 26 with the following replacement paragraph:

Preferably, for compounds according to Formula IC, the configuration ~~conformation~~ of the substituents on the carbon-carbon double bond is *E*-.

Please replace the paragraph beginning at p. 35 line 1 with the following replacement paragraph:

Preferably, the configuration ~~conformation~~ of the substituents on the carbon-carbon double bond is *E*-.

Please replace the paragraph beginning at p. 35 line 3 with the following replacement paragraph:

Compounds according to the above preferred sub-embodiment of compounds according to Formula IC include, for example: (1E)-2-(2-chlorophenyl)-1-[benzylsulfinyl]ethene; (1E)-2-(4-chlorophenyl)-1-[benzylsulfinyl]ethene; (1E)-1-{[(4-chlorophenyl)methyl]sulfinyl}-2-(4-fluorophenyl)-ethene; (1E)-2-(4-chlorophenyl)-1-{[(4-chlorophenyl)methyl]sulfinyl}ethene; (1E)-2-(4-fluorophenyl)-1-{[(4-fluorophenyl)methyl]sulfinyl}-ethene; (1E)-2-(2,4-difluorophenyl)-1-{[(4-fluorophenyl)methyl]sulfinyl}ethene; (1E)-1-{[(4-bromophenyl)methyl]sulfinyl}-2-(4-fluorophenyl)-ethene; (1E)-2-(4-bromophenyl)-1-{[(4-bromophenyl)methyl]sulfinyl}ethene; (1E)-2-(4-bromophenyl)-1-{[(4-fluorophenyl)methyl]sulfinyl}ethene; and (1E)-1-{[(4-bromophenyl)methyl]sulfinyl}-2-(4-chlorophenyl)ethane. ~~; andsalts thereof~~

Please replace the paragraph beginning at p. 35 line 23 with the following replacement paragraph:

Preferably, for the second preferred sub-embodiment of compounds according to Formula IC, the configuration ~~conformation~~ of the substituents on the carbon-carbon double bond is *Z*-.

Please replace the paragraph beginning at p. 36 line 25 with the following replacement paragraph:

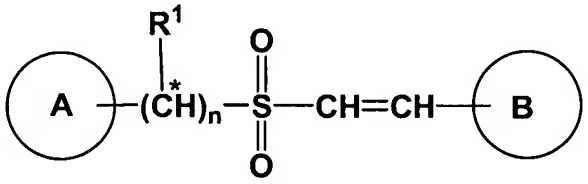
Preferably, the configuration ~~conformation~~ of the substituents on the carbon-carbon double bond is *E*-.

Please replace the paragraph beginning at p. 39 line 21 with the following replacement paragraph:

wherein A, B, n, R^1 and * are as defined herein for compounds of Formula I, and the configuration ~~conformation~~ of the substituents on the two carbons of the carbon-carbon double bond is *E*-; or a salt thereof.

Please replace the paragraph beginning at p. 41 line 13 with the following replacement paragraph:

According to such an embodiment, a compound according to Formula V:



V

wherein A, B, n, R^1, and * are as defined for compounds according to Formula I, and the configuration ~~conformation~~ of the substituents on the carbon-carbon double bond is either *E*- or *Z*-, or a salt thereof; is prepared by the steps of:

(a) reacting a compound according to Formula I, as defined herein, with at least one oxidizing agent capable of oxidizing a sulfoxide to a sulfone; and

(b) isolating a compound according to Formula V from the reaction products.

Please replace the paragraph beginning at p. 48 line 10 with the following replacement paragraph:

The compounds are also believed useful in the treatment of non-cancer proliferative disorders, that is, proliferative disorders which are characterized by benign indications. Such disorders may also be known as "cytoproliferative" or "hyperproliferative" in that cells are made by the body at an atypically elevated rate. Non-cancer proliferative disorders believed treatable by compounds of the invention include, for example: hemangiomatosis in newborn, secondary progressive multiple sclerosis, atherosclerosis, chronic progressive myelodegenerative disease, neurofibromatosis, ganglioneuromatosis, keloid formation, Paget's [[D]]disease of the bone, fibrocystic disease of the breast, uterine fibroids, Peyronie's fibrosis, ~~and~~ Dupuytren's fibrosis, restenosis, benign proliferative breast disease, benign prostatic hyperplasia, X-linked lymphoproliferative disorder (Duncan disease), post-transplantation lymphoproliferative disorder (PTLD), macular degeneration, and retinopathies such as diabetic retinopathies and proliferative vitreoretinopathy (PVR)

Please replace the paragraph beginning at p. 57 line 20 with the following replacement paragraph:

The sulfide acetic acid compound **(ii)** in Scheme 5 may be then oxidized with a suitable oxidizing agent to give a corresponding sulfinyl acetic acid compound **(iii)**. A suitable oxidizing agent is any oxidant capable of selectively oxidizing a sulfide to a sulfoxide. Examples include 3-chloroperbenzoic acid (MCPBA) (Aldrich 27,303-1) and potassium peroxymonosulfate (Aldrich 22,803-6). The oxidation is preferably performed at low temperature, preferably from -40°C to 0°C. The reaction is preferably carried out in a suitable solvent. Suitable solvents are preferably nonpolar organic solvents, more preferably halogenated solvents, *e.g.*, dichloromethane (DCM).

Please replace the paragraph beginning at p. 66 line 15 with the following replacement paragraph:

Numerous bifunctional linkers, useful as linkers (-L-), exist which have been used specifically for coupling small molecules to monoclonal antibodies, and many of these are commercially available. Examples include *N*-succinimidyl-3-(2-pyridyldithio)-propionate (SPDP), 2-iminothiolane (2-IT), 3-(4-carboxamidophenyldithio)propionthioimidate (CDPT), *N*-succinimidyl-acetylthioacetate (SATA), ethyl-*S*-acetyl-propionthioimidate (AMPT) and *N*-succinimidyl-3-(4-carboxamidophenyldithio)propionate (SCDP). Procedures for preparation of immunoconjugates using these linkers are[[is]] detailed in Toxin-Targeted Design for Anticancer Therapy. II: Preparation and Biological Comparison of Different Chemically Linked Gelonin-Antibody Conjugates (Cattel, *et al, J. Pharm. Sci.*, 82:7, p699-704, 1993), (the entire disclosure of which is incorporated herein by reference).

Please replace the paragraph beginning at p. 75 line 19 with the following replacement paragraph:

The compounds are also useful in the treatment of non-cancer proliferative disorders, that is, proliferative disorders which are characterized by benign indications. Such disorders may also be known as "cytoproliferative" or "hyperproliferative" in that cells are made by the body at an atypically elevated rate. Such disorders include, but are not limited to, the following: hemangiomatosis in new born, secondary progressive multiple sclerosis, chronic progressive myelodegenerative disease, neurofibromatosis, ganglioneuromatosis, keloid formation, Paget's [[D]]disease of the bone, fibrocystic disease of the breast, uterine fibroids, Peyronie's fibrosis, ~~and~~ Dupuytren's fibrosis, restenosis and cirrhosis.

Please replace the paragraph beginning at p. 75 line 29 with the following replacement paragraph:

The compounds may be administered by any route, including oral and parenteral administration. Parenteral administration includes, for example, intravenous, intramuscular,

intraarterial, intraperitoneal, intranasal, rectal, intravaginal, intravesical (*e.g.*, to the bladder), intradermal, topical or subcutaneous administration. Also contemplated within the scope of the invention is the instillation of drug in the body of the patient in a controlled formulation, with systemic or local release of the drug to occur at a later time. For example, the drug may be localized in a depot for controlled release to the circulation, or for release to a local site of tumor growth.

Please replace the paragraph beginning at p. 77 line 14 with the following replacement paragraph:

The specific dose of compound according to the invention to obtain therapeutic benefit for radioprotection will[[,]] be determined by the particular circumstances of the individual patient including, the size, weight, age and sex of the patient, the type, dose and timing of the ionizing radiation, and the route of administration of the compound of the invention.